

REMARKS

Pursuant to 37 C.F.R. §1.116, reconsideration of the instant application, as amended herewith, is respectfully requested. The amendments filed herewith are in response to the Examiners Final Rejection which is the reason that they were not filed earlier. The amendments also put the application in better condition for allowance and appeal. Claims 2 and 3, as now amended, claim a curing accelerator; and reference to the curing accelerator reacting with a compound has been deleted as recommended by the Examiner. This change has also been made in the specification as recommended by the Examiner.

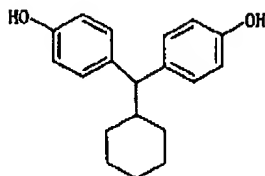
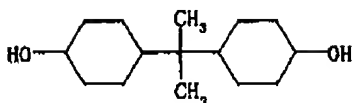
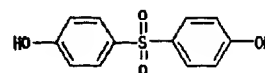
Reconsideration is respectfully requested of the rejection of Claims 2 and 5 under 35 U.S.C. 112. The Examiner pointed out that the term "a compound other than the tetrakisphenol compound which reacts with epoxy groups of an epoxy resin to cure the resin" is confusing since it seems to indicate the presence of 1) an accelerator compound and 2) a curing compound other than the accelerator compound. Reference to 2) has been deleted.

Reconsideration is also respectfully requested of the rejection of Claims 1-3 and 5 under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Nos. 5-194711 (Kurita) which the Examiner cites as showing a clathrate useful as a curing agent and 6-329570 Asai et al. which the Examiner cites as disclosing clathrates of a tetrakisphenol.

Neither reference remotely suggest using the tetrakisphenol clathrate as a curing agent for epoxy resins, nor has the Examiner cited any reference which would suggest combining the two references.

The following is a comparison between the Kurita results and the outstanding unexpected results of the present invention.

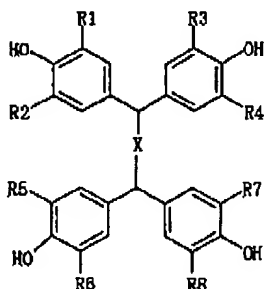
Host compounds having hydroxy phenyl shown in the Kurita Patent are as follows. (Please see DERWENT translation of Kurita Patent 15/29 page [0 0 1 4] (I) , (2) and(14))

BHC**BPA****BPS**

These host have 2 hydroxy groups. Kurita's clathrate combines the host and guest loosely as compared with the clathrate shown in JP 6-329570 (AB:Nippon Soda) and ASAI (D:USP 5,364,977).

Kurita's clathrate makes a 2 dimensional complex with the guest.

The host used for the clathrate shown in JP 6-329570 (AB:Nippon Soda) and ASAI (D:USP 5,364,977) has 4 hydroxy groups as shown below,



The host used for the clathrates shown in F 6-329570 (AB:Nippon Soda) and ASAI (D:USP 5,364.977). which is same as our host , makes a clathrate having a 3 dimensional complex with the guest.

From these structural difference of clathrates, the properties of clathrates remarkably changes. For example, the melting point and other property changes. Especially. Kurita's clathrate having 2 dimensional structure dissolves in an epoxy resin and releases the guest. Namely, the property of the clathrate is forfeited when the clathrate dissolves and starts to react as a curative and curing starts at a lower temperature than the curative releasing temperature should be.

On the other hand, the clathrate having a 3 dimensional complex used in our invention does not dissolve in an epoxy resin, maintains a solid state and is very stable in the epoxy resin. Namely, the clathrate holds the guest until the proper curative-releasing temperature is reached and then curing starts sharply. We believe that this effect can not be expected by a person of ordinary skill in the art.

Inventive step over Japanese Patent Nos. 5-1 94711 (AA: Kurita), 6-329570 and Asai et al.

Please see table 3 of the present specification. Samples Nos. 48, 50, 53 and 54 are comparative clathrates which are shown in JP 5-194711 (AA Kurita)

Asai et al does not teach more than JP 5-194711 (AA Kurita).

When the host compound is Tetrakis phenol, the clathrate shows excellent properties for curatives and curing composition.

In these examples , TEP (Tetrakis phenol) is used to demonstrate the superiority of the present invention and potential life (workable time of resin) is remarkably prolonged.

Table 1

Example No. 2	this invention Sample No. 32	Host : Guest TEP : 2MZ	Pot Life (hours) 18
Comparative Example No. 2	AA:Kurita Sample No. 53 Sample No. 54	BHC : 2MZ BPA : 2MZ	9 5

Example No. 3	this invention Sample No. 24	Host : Guest TEP : 2E4MZ	Pot Life (hours) 180
Comparative Example No. 3	AA:Kurita Sample No. 50	BHC : 2E4MZ	12

Example No. 4	this invention Sample No. 10	Host : Guest TEP : EDA	Pot Life (hours) 180
Comparative Example No. 4	AA:Kurita Sample No. 48	BHC : EDA	6

CONCLUSION

The Examiner's attention is directed to the decision, *In re Anita Dembiczak and Benson Zinbarg* 50 USPQ2d 1614, 1617-1618 (Fed.Cir. 1999) where the Court of Appeals for the Federal Circuit held:

"Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential evidentiary component of an obviousness holding"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them"); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (evidence of teaching or suggestion "essential" to avoid hindsight); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297, 227 USPQ 657, 667 (Fed. Cir. 1985) (district court's conclusion of obviousness was error when it "did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination"). See also *Graham*, 383 U.S. at 18, 148 USPQ at 467 ("strict observance" of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability - the essence of hindsight. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) ("The

invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time."). In this case, the Board fell into the hindsight trap.

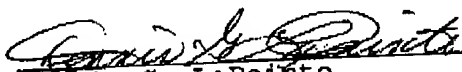
Even though the claims have been amended to increase their specificity, no estoppel has been created. See Mannesmann Demag Corp. v Engineered Metal Products Co.

A Notice of Allowance is earnestly solicited.

If the Office is not fully persuaded as to the merits of the Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (727) 538-3800 would be appreciated.

Very respectfully,

Dated: 9/21/01


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AMENDMENT B
(37 C.F.R. §1.116)

IN THE SPECIFICATION

Please amend the paragraphs starting at page 6 line 15; page 7, lines 7 and page 12 line 5 in accordance with 37 C.F.R. §1.121. A version of the paragraphs depicting the changes is shown as an attachment to this Amendment and a clean version of the paragraphs is also attached herein.

IN THE CLAIMS:

Please amend Claims 2 and 3 in accordance with 37 C.F.R. §1.121. A version of the claims depicting the changes is shown as an attachment to this Amendment and a clean version of the claims is also attached herein.

MARKED-UP VERSION OF PARAGRAPHS STARTING AT PAGE 6, LINE 10, PAGE 7, LINE 6 AND PAGE 12, LINE 3 IN THE SPECIFICATION

Please amend the paragraph starting at page 6 line 10 as follows:

The present invention is directed to an epoxy resin composition characterized by containing at least one of a clathrate comprising a tetrakisphenol compound represented by a general formula I and a compound which reacts with the epoxy group of an epoxy resin to cure the resin and a clathrate comprising a tetrakisphenol compound represented by the general formula I and a compound [accelerating the curing of a compound] other than the tetrakisphenol compound, which accelerates the curing of an epoxy resin, [which reacts with epoxy groups of an epoxy resin to cure the resin] and preferably to an epoxy resin composition wherein said clathrate is contained at a content range of from 0.001 to 0.1 mole based on 1 mole of epoxy groups.

Please amend the paragraph starting at page 7 line 6 as follows:

As examples for the compound (curative) which reacts with the epoxy group of an epoxy resin to cure the resin and the compound (curing accelerator) accelerating the curing of [a compound which reacts with the epoxy group of an epoxy resin to cure] the resin, amines imidazoles, amides, esters, alcohols, thiols, ethers, thioethers, phenols, phosphorus compounds, ureas, thioureas, acid anhydrides, Louis acids, onium salts, active silica compounds-aluminium complexes, etc. are given, however, any ones can be optionally selected from the ones which are customarily and conventionally-used as a curative or a curing accelerator for epoxy resins without any constraints.

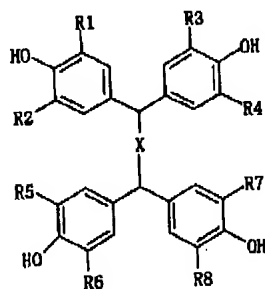
Please amend the paragraph starting at page 12 line 3 as follows:

The synthesis of a clathrate comprising a tetrakisphenol compound and either a compound which reacts with

the epoxy group of an epoxy resin to cure the resin (a curative) or a compound accelerating the curing of [a compound which reacts with the epoxy group of an epoxy resin to cure]the resin (a curing accelerator) can be achieved at high selectivity and a high yield, by adding a tetrakisphenol compound into liquid amine or imidazole compound, which are either a curative or a curing accelerator, to allow them to a reaction in case such amine and imidazole are liquid compounds, or by adding a tetrakisphenol compound into the suspension of such amine or imidazole in case they are solid compound, or by allowing a tetrakisphenol powder to a solid-phase reaction directly with such solid amine or imidazole. The clathrate according to the present invention is produced basing on a mechanism that the molecules of a guest compound penetrate into the space in the crystalline lattice constituted by the molecules of a host compound. Consequently, for a guest compound, easiness in such penetration might be determined by the size, the configuration, the polarity, the solubility, etc. of the molecules of a guest compound. The state of the clathrate prepared in the present Invention is crystalline solid.

MARKED-UP VERSION OF CLAIMS 2 AND 3

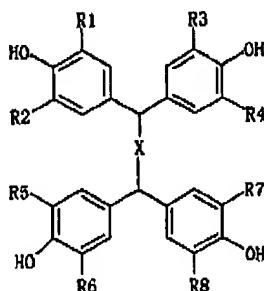
2. (Twice Amended) A clathrate curing accelerator for epoxy resins comprising:
a tetrakisphenol compound represented by a general formula [I];



wherein X represents $(CH_2)_n$, n is 0, 1, 2, or 3, and R^1 to R^8 each represents hydrogen, a lower alkyl, optionally-substituted phenyl, halogeno or a lower alkoxy; and

a compound [accelerating the curing of a compound] other than the tetrakisphenol compound, which accelerates the curing of an epoxy resin, [which reacts with epoxy groups of an epoxy resin to cure the resin] wherein the clathrate is present in the resin in a range of from 0.001 to 0.1 mole based on 1 mole of the epoxy groups.

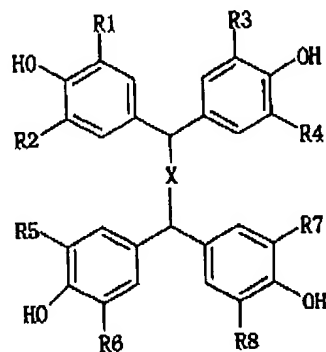
3. (Twice Amended) Epoxy resin compositions comprising:
an epoxy resin, said epoxy resin containing a clathrate curative, said clathrate curative being a tetrakisphenol compound represented by a general formula [I]



wherein X represents $(CH_2)_n$, n is 0, 1, 2, or 3, and R^1 to R^8 each represents hydrogen, a lower alkyl, optionally-substituted phenyl, halogeno or a lower alkoxy; and

a compound other than the tetrakisphenol compound, which reacts with epoxy groups of the epoxy resin to cure the resin, wherein the clathrate curative is present in the resin in a range of from 0.001 to 0.1 mole based on 1 mole of the epoxy groups; and/or

a clathrate curing accelerator, said clathrate curing accelerator being a tetrakisphenol compound represented by a general formula [I];



wherein X represents $(CH_2)_n$, n is 0, 1, 2, or 3, and R^1 to R^8 each represents hydrogen, a lower alkyl, optionally-substituted phenyl, halogeno or a lower alkoxy; and

a compound [accelerating the curing of a compound] other than the tetrakisphenol compound, which accelerates the curing of an epoxy resin, [which reacts with epoxy groups of an epoxy resin to cure the resin] wherein the clathrate is present in the resin in a range of from 0.001 to 0.1 mole based on 1 mole of the epoxy groups.